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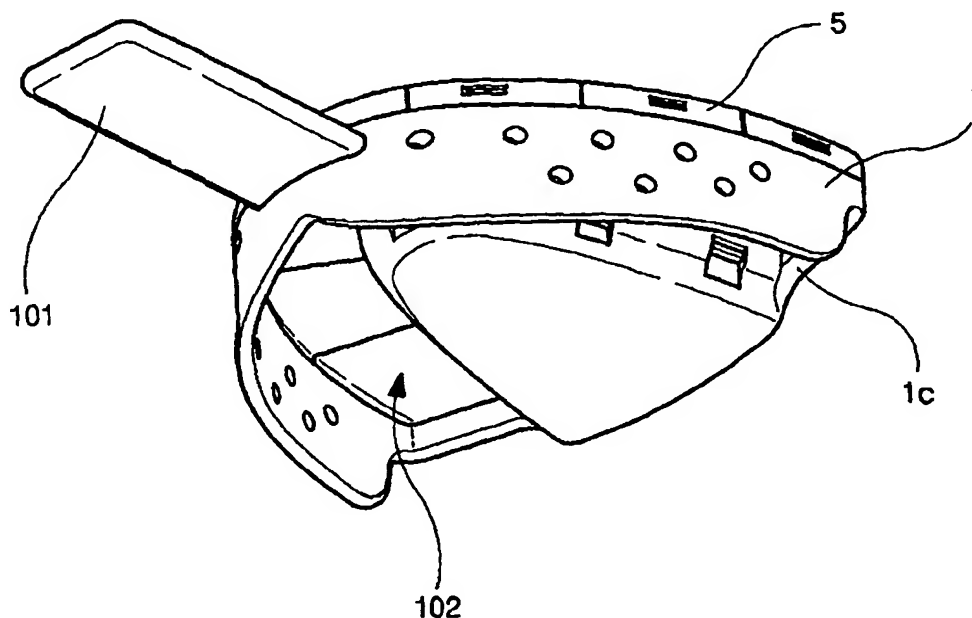
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- (71) Applicant and (72) Inventor: YE, Dong-Hae [KR/KR]; 682-25, Pyugri-3dong, Seo-Gu, Daegu 703-840 (KR). For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: DENTAL TRAY



(57) Abstract: The present invention relates to an improved dental tray used in patterning a diseased tooth, and more particularly to a dental ray for implant treatment. The dental tray is characterized in that a tray main body (1) provided with a knob (101) is made of aluminum, a molding part (102) formed along the gum is opened except to a connection portion (1c), a protrusion and a bridging recess (3) are formed along the both side walls 1a and (1b) of the opened portion, a molding groove is formed by coating a connection segment (5) made of a transparent synthetic resin with a designated width and provided with a bridging groove (503) and a bridging recess (504) formed on the both connection protions (501 and 502).

## DENTAL TRAY

### TECHNICAL FIELD

The present invention relates to an improved dental tray  
5 used in patterning a diseased tooth, and more particularly to  
a dental ray for implant treatment.

### BACKGROUND ART

Generally, implant treatment is treatment of that  
10 supporters are installed on the gum in order to implant a tooth  
and an artificial tooth is fixed to the supporters. Therefore,  
in the implant treatment, in order to precisely pattern the  
tooth, an implant zone must be exactly set centering around the  
supporters.

15 Thus, a tray in which the bottom is separated into plural  
segments with a constant width.

However, since the segments of the conventional developed  
tray are engaged with a tray main body with bolts and nuts, it  
is inconvenient to separate and engages the segments. Further,  
20 since the tray is made of a metal, it is impossible to drill a  
hole in the tray.

Moreover, since the tray made of the metal is opaque, it  
is impossible to drill a hole at a precise location in the tray  
perforate. Thus, it is inconvenient to precisely pattern the  
25 tooth using the tray.

DISCLOSURE OF THE INVENTION

Therefore, the present invention has been made in view of the above problems, and it is an object of the present invention to engage a disposable connection segment made of a transparent synthetic resin with the bottom of a tray main  
5 body made of aluminum, thereby precisely and conveniently setting an implant zone.

BRIEF DESCRIPTION OF THE DRAWINGS

10 The above and other objects, features and other advantages of the present invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings, in which:

Fig. 1 is a perspective bottom view of the present  
15 invention;

Fig. 2 is a perspective top view of the present invention;

Fig. 3 is a schematic exploded top view of the present invention;

20 Fig. 4 is a schematic exploded bottom view of the present invention;

Fig. 5 is a cross-sectional view of the present invention;

Fig. 6 is another cross-sectional view of the present  
25 invention; and

Fig. 7 is a schematic view of the used state of the present invention.

BEST MODE FOR CARRTING OUT THE INVENTION

5 Hereinafter, referring to the accompanying drawings, preferred embodiments of the present invention will be described in detail.

A dental tray of the present invention is characterized that a tray main body 1 provided with a knob 101 is made of  
10 aluminum, a molding part 102 formed along the gum is opened except to a connection portion 1c, a protrusion and a bridging recess 3 are formed along the both side walls 1a and 1b of the opened portion, a molding groove is formed by coating a connection segment 5 made of a transparent synthetic resin  
15 with a designated width and provided with a bridging groove 503 and a bridging recess 504 formed on the both connection portions 501 and 502.

Herein, undescribed reference numbers 6, 7 and 8 represent the gum, a supporter 7, and a frame member 8.

20 In the above-described dental tray, the tray main body 1 is made of aluminum, and the connection segment 5 disposed on a molding groove 102 is made of the transparent synthetic resin and engaged with the protrusion 2 and the bridging recess 3 formed on the inner wall 1a and the outer wall 1b of the  
25 molding groove 102. Therefore, when the bridging groove 503 of the connection segment 5 is engaged with the protrusion 2 of

the outer wall 1b and the bridging recess 504 formed on the connection portion 502 is extended, the bridging recess 504 is engaged with the bridging recess 3 by the elasticity, thereby achieving the engagement. On the other hand, in separating, the connection segment 5 is separated from the tray main body 5 in the reverse order of the above-described process. Therefore, the present invention makes the engagement and separation of the tray main body 1 and the connection segment 5 more easily and quickly, thereby providing the convenient engagement and separation of the tray main body 1 and the connection segment 5

#### INDUSTRIAL APPLICABILITY

Using the dental tray of the present invention, a dentist can correctly confirm the implant zone via the molding groove and then precisely detects the position of a fixing rod inserted into the gum, thereby precisely patterning the tooth by drill a hole on a precise location. Further, since the tray main body is made of a metal with a designated strength, the tray is not deformed, thereby continuously being used by replacing only the connection segment 5 with a new one. Therefore, the present invention remarkably reduces the cost for maintaining and treating the tray.

## WHAT IS CLAIMED IS:

1. A dental tray is characterized in that a tray main  
body 1 provided with a knob 101 is made of aluminum, a molding  
part 102 formed along the gum is opened except to a connection  
5 portion 1c, a protrusion and a bridging recess 3 are formed  
along the both side walls 1a and 1b of the opened portion, a  
molding groove is formed by coating a connection segment 5  
made of a transparent synthetic resin with a designated width  
10 and provided with a bridging groove 503 and a bridging recess  
504 formed on the both connection portions 501 and 502.

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FIG. 1

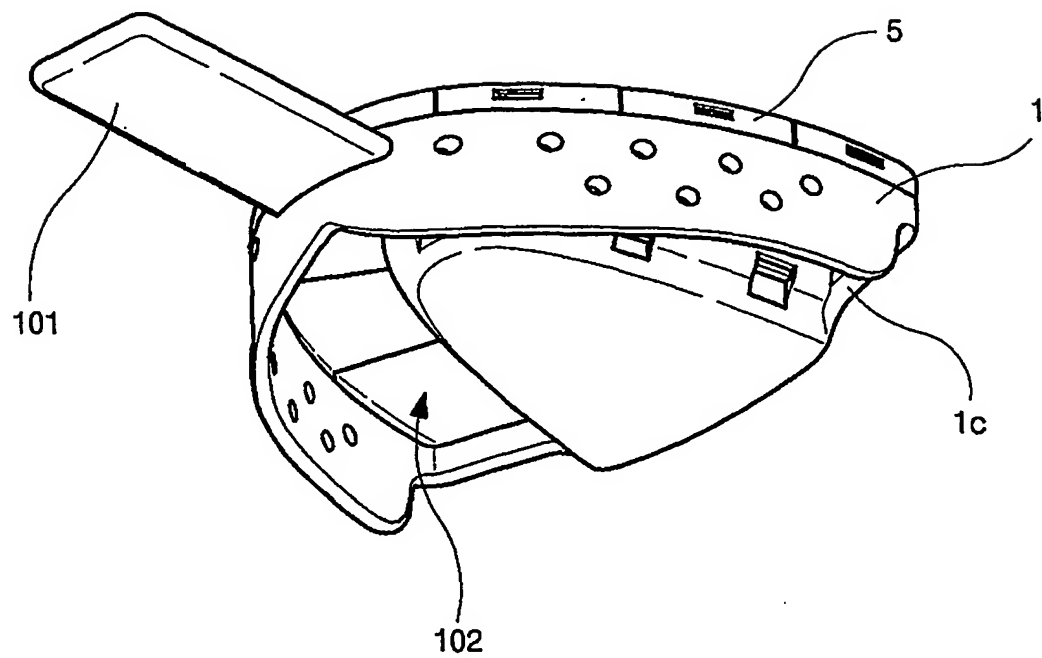


FIG. 2

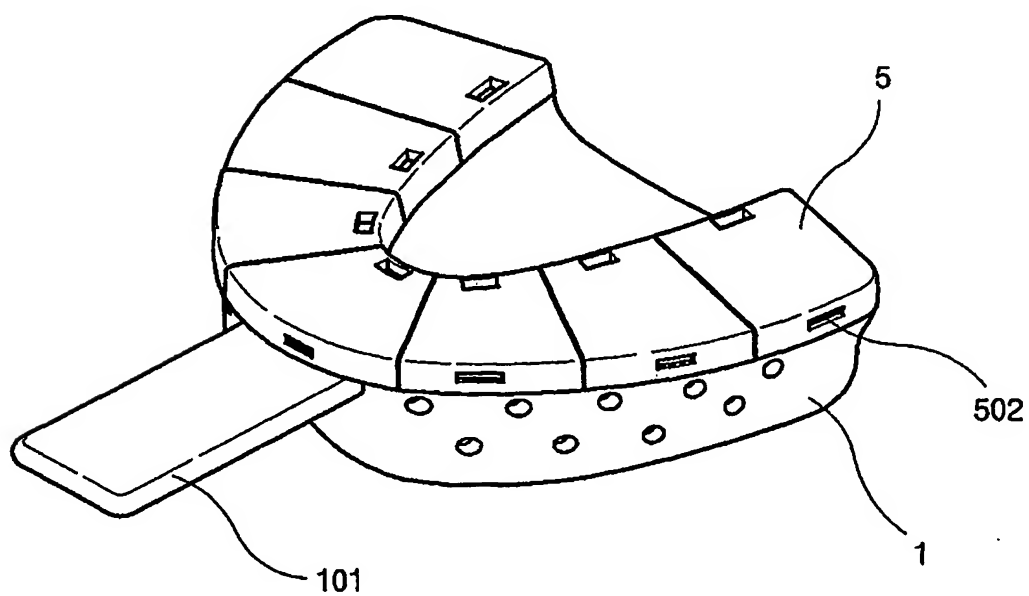


FIG. 3

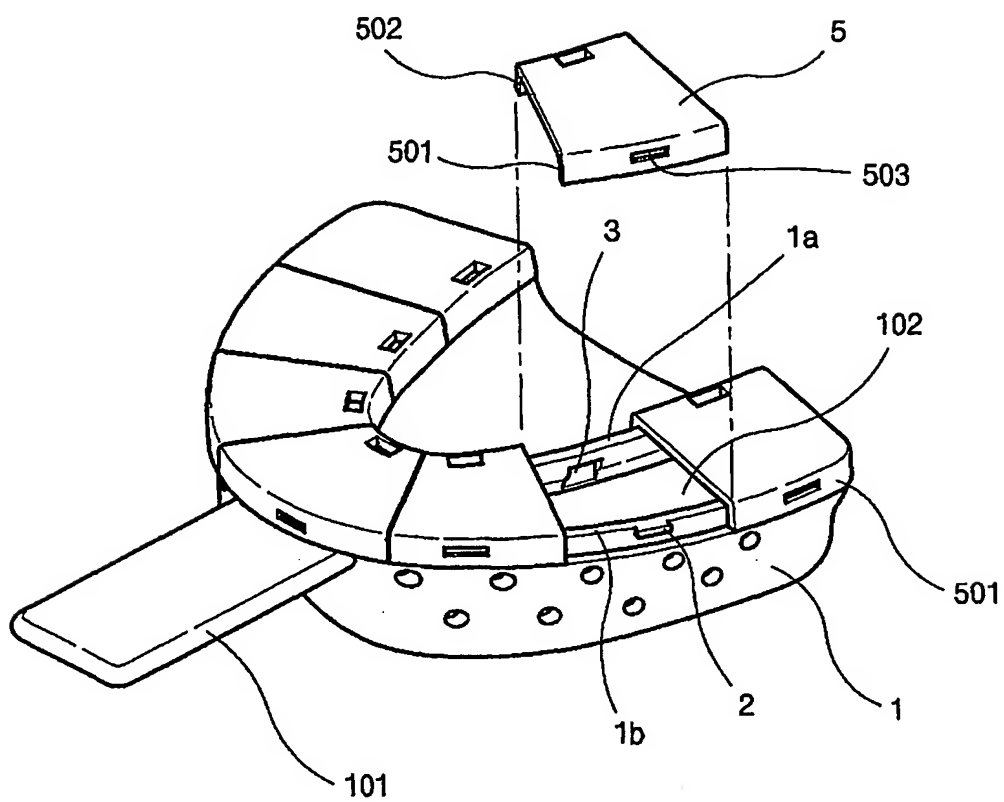




FIG. 4

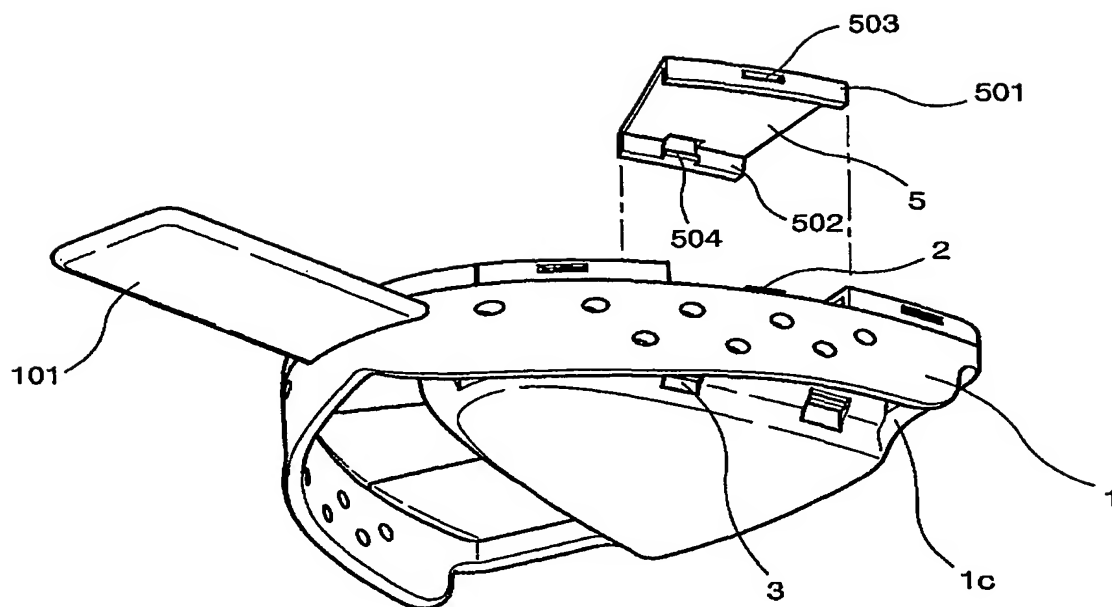


FIG. 5

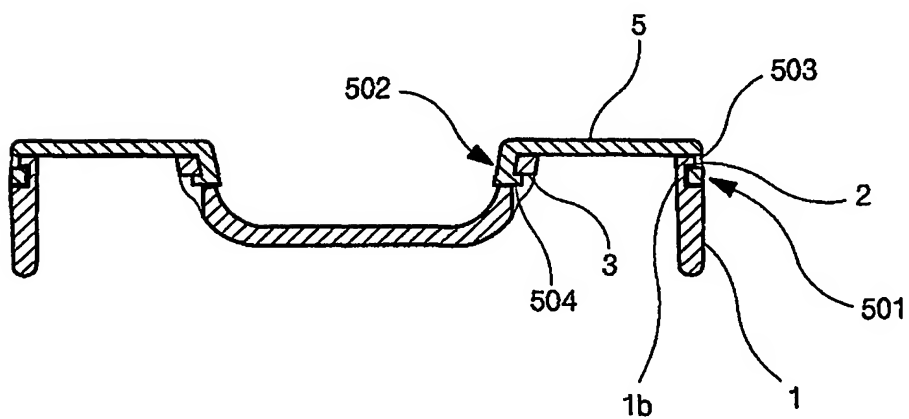
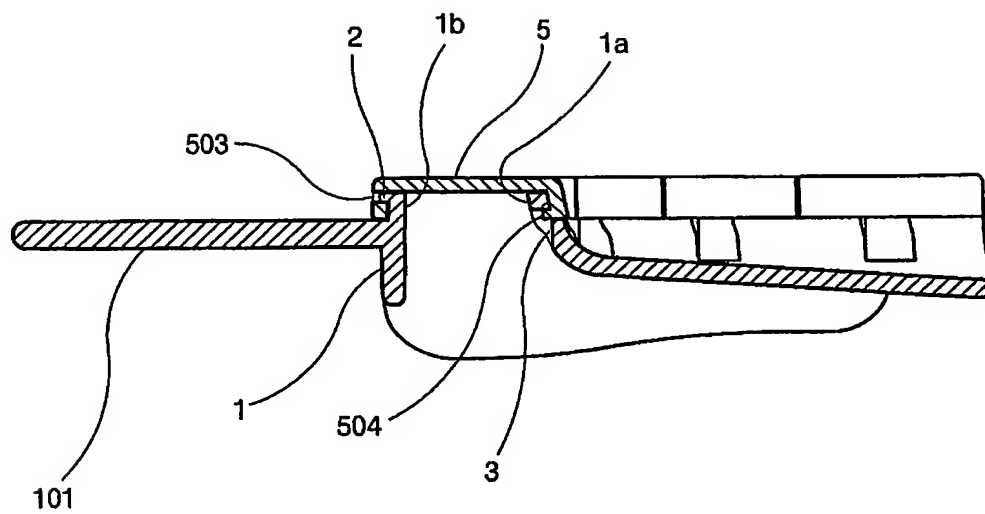
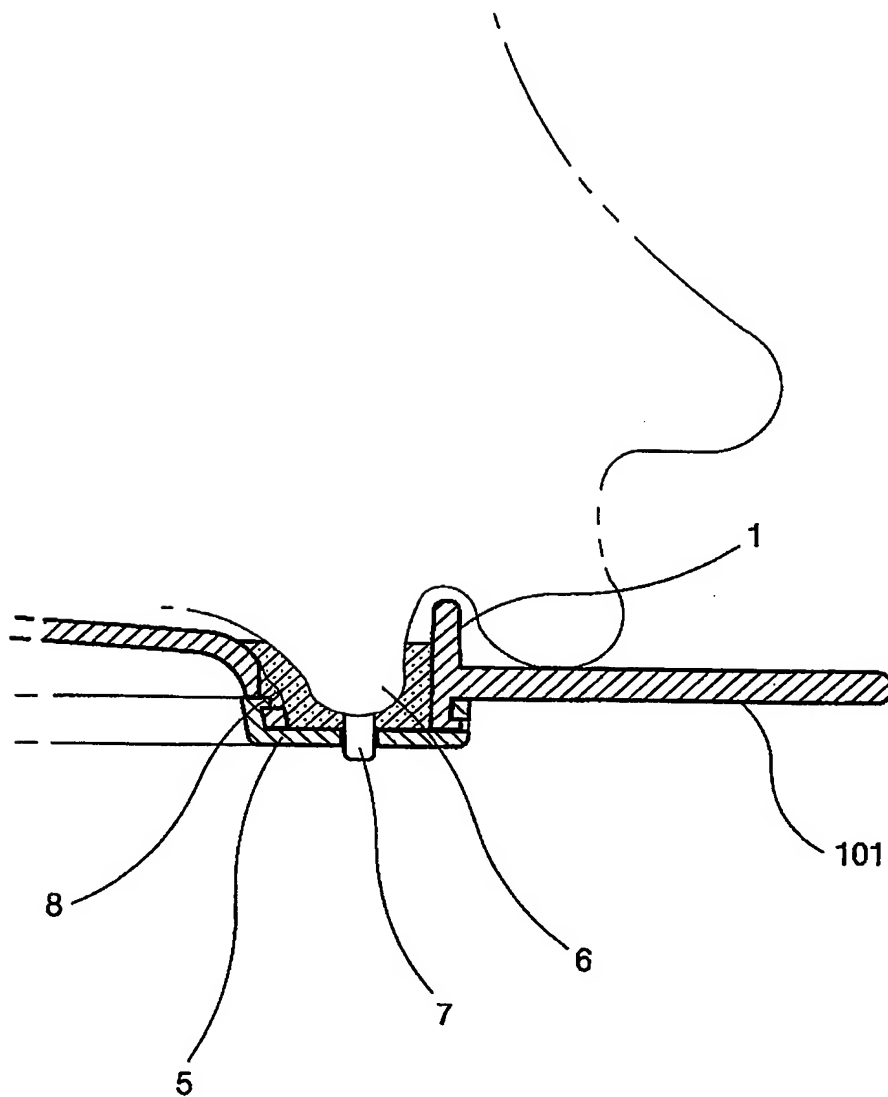


FIG. 6



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FIG. 7



# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR02/01959

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7 A61C 9/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 A61C 9/00, A61C 13/38, A61C 19/06

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and Applications for Utility models since 1975

Japanese Utility models and Applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

NPS, PAJ, FPD, USP

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 20010010898 A1 (Carsten Joergensen. et al) 02 August 2001 see abstract, fig.5-6, claimes 1-12	1
A	US 5336086 A (Coltene/Whaledent, Inc.) 09 August 1994 see the whole document	1
A	JP 56-80118 U (Lion Dentifrice Co., Ltd) 29 June 1981 see the whole document	1
A	KR 20-0217311 Y1 (Kwon, Chill-Su) 15 March 2001 see the whole document	1

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

PCT/KR02/01959

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 20010010898 A1	02.08.2001	AU 200038246 A5 WO 200062703 A1 EP 1087718 A1 FR 2792187 A1 FR 2792187 B1	02.11.2000 26.10.2000 04.04.2001 20.10.2000 10.08.2001
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KR 20-0217311 Y1	15.03.2001	NONE	